

Efficient Implementation of Low Power Mode in Digital Subscriber Line (DSL) Transceivers

ABSTRACT

Efficient implementation techniques of a low power mode, (i.e. L2 mode for ADSL2) for DSL transceivers are described. The techniques save memory space and reduce implementation complexity. A constellation mapper in a DSL transmitter determines the number of bits to be retrieved for an i th sub-carrier in the low power mode based on the number of bits allocated for this same sub-carrier in a normal transmission mode, (e.g. L0 mode in ADSL2) and a bit allocation threshold T . A constellation demapper in a DSL receiver determines the number of bits used for an i th sub-carrier in the low power mode based on the bit tables for the L0 mode and the bit threshold T .